SCHIZOPHRENIA

Introduction

Schizophrenia is a neurodevelopmental disorder associated with deficits in cognition, affect, and social functioning (American Academy of Child & Adolescent Psychiatry [AACAP], 2001). Psychotic symptoms, along with social and occupational dysfunction which persists for at least six months, must be evident in those children who are diagnosed with the disorder (Murphy et al., 2001). Schizophrenia, which is classified as a psychotic disorder, meaning psychosis—a gross impairment in reality—predominates in the continuum of symptoms (Murphy et al.). Psychosis disorders differ from other mental disorders in that the psychotic symptoms—delusions, hallucinations, and disorders of thought—are the primary symptoms. Schizophrenia may occur in children over the age of five, but it very rarely occurs before adolescence (National Institute of Mental Health [NIMH], 1999). Hallucinations and delusions, the psychotic symptoms of schizophrenia, are unusual prior to adolescence. The average age of onset is 18 in men and 25 in women (NIMH, 2001).

As described by NIMH (2001), children with schizophrenia have extreme difficulty managing daily activities and exhibit the same symptoms as adults. These symptoms include hallucinations, delusions, social withdrawal, lack of emotion, and loss of social skills, as well as a loss of the ability to care for themselves. Furthermore, children with schizophrenia and children with autism or other pervasive developmental disabilities (PDD) may share the same symptomology, thus making it extremely difficult to diagnose.

Diagnosis

NIMH research (2001) reveals that schizophrenia normally originates with intense psychotic episodes in adults; however, the disorder usually emerges more gradually in children. For example, motor and speech or language delays may precede the development of the disorder. Further, children and adults share the same diagnostic criteria, except that symptoms in children appear prior to age twelve, rather than the late teens or early 20s. Children with schizophrenia often see or hear

things that are non-existent, exhibit improper behavior, such as laughing at inappropriate times, and exhibit an absence of body language or eye contact.

Table 1

Facts about Schizophrenia

- Schizophrenia is rare in children, affecting only about 1 in 40,000 compared to 1 in 100 in adults (Nicolson & Rapoport, as cited by NIMH, 2001).
- Adolescent schizophrenia is more common, although the onset typically occurs in late adolescence and early 20s (Findling, Boorady, & Sporn, 2007).
- The average age of onset is 18 in men and 25 in women.
- Schizophrenia ranks among the top 10 causes of disability in developed countries worldwide (Murray, C., & Lopez, A., as cited in NIMH, 2001).
- Children with schizophrenia may also share some symptoms with—and be mistaken for—children who suffer from autism or other pervasive developmental disabilities, which affect about 1 in 500 children.

Source: National Institute of Mental Health (NIMH), 2001.

Several factors make it difficult to diagnose children with schizophrenia. First, hallucinations are pervasive when the disorder is not adequately treated. In addition, children with other conditions, such as mood disorders may report hallucinations as well when they experience stress (National Alliance for the Mentally Ill [NAMI], *Early Onset Schizophrenia*, 2000). In general, the medical community is reluctant to diagnose a child with schizophrenia due to the stigma associated with the diagnosis and because hallucinations in children may be attributable to other causes (McKenna et al., as cited in Schaeffer, 2002). When symptom development is examined in children who meet the criteria for schizophrenia, a gradual progression is seen from infancy which usually affects several functional areas including social, cognitive, sensory, and motor (Alaghband-Rad et al., Watkins et al., as cited in Schaeffer).

The *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)* recognizes five subtypes of schizophrenia. These are outlined in Table 2.

Schizophrenia is characterized by positive and negative symptoms (Murphy et al., 2001). This is to clarify the impact of the symptoms on diagnosis of subtypes and for treatment (Crow et al., Klosterkotter et al., Maziade et al., as cited by the U.S. Department of Health and Human Services, 1999). Positive symptoms are those characterized by the presence of unusual thoughts, perceptions, and behaviors and appear to reflect an excess or distortion of normal functions (Murphy et al. and the U.S. Department of Health and Human Services). Negative symptoms are those that appear to reflect a diminution or loss of normal functions (U.S. Department of Health and Human Services).

The diagnosis of schizophrenia, according to the *DSM-IV*, requires at least a one-month duration of two or more positive symptoms, unless hallucinations or delusions are especially bizarre, in which case one alone suffices for diagnosis. Negative symptoms are difficult to appraise because they are not as extreme or abnormal and are potentially caused by a variety of other factors (U.S. Department of Health and Human Services, 1999). These symptoms are described in Table 3. Children, like adults, may exhibit both positive and negative symptoms simultaneously (Murphy et al., 2001).

Table 2

Subtypes of Schizophrenia

Paranoid Type—Paranoid delusions, frequent auditory hallucinations, affect not flat

Catatonic Type—Motoric immobility and excessive purposeless motor activity, maintenance of a rigid echolalia

Disorganized Type—Disorganized speech, disorganized behavior, flat or inappropriate affect; not catatonic

Undifferentiated Type (probably most common) —Delusion, hallucinations, disorganized speech, catatonic behavior, negative symptoms but the criteria are not met for the Paranoid, Disorganized, or Catatonic Type

Residual Type—Met criteria for schizophrenia, now resolved, i.e., no hallucinations, no prominent delusions, etc., but residual negative symptoms or attenuated delusions, hallucinations or thought disorder

Source: Murphy et al., 2001.

In diagnosing a child with schizophrenia, potential organic conditions for psychotic symptoms need to be ruled out as a possible cause. Such conditions that need to be considered include acute intoxication, delirium, central nervous system lesions, tumors or infections, metabolic disorders, and seizure disorders (AACAP, 2001).

Table 3

Positive and Negative Symptoms of Schizophrenia

Positive symptoms

Delusions – Often described by content

Hallucinations – Auditory, visual, tactile and olfactory hallucinations; voices that are commenting

Bizarre behavior – Aggressive/agitated, strange appearance, odd clothing and social behavior, repetitive-stereotyped behavior

Negative symptoms

Affective flattening – Decreased expression of emotion

Algoia – Lack of words, including poverty of speech

Asociality – Few friends, activities, interests, impaired intimacy

Source: Murphy et al., 2001.

Assessment and Other Implications

An individualized approach should be taken in assessing and diagnosing a child who may have schizophrenia (Psychiatry in Practice, 2002). Making a formal diagnosis of schizophrenia is only the first step in the process of clinical evaluation and treatment planning. Multidimensional assessments of psychopathological, psychosocial, and personal functioning are also vital elements in acquiring an understanding of the complexity of the illness (Psychiatry in Practice).

Schizophrenia patients have a high risk for suicide. Although the statistics apply to the adult population, the high prevalence rate for suicide should be considered in treating children. Table 4 outlines statistics regarding schizophrenia and suicide.

Table 4

Schizophrenia and Suicide

- Approximately one third of those with schizophrenia will attempt suicide;
- 10% will actually complete suicide;
- Those considered high risk include those with a history of depression, those with a recent hospital discharge, and those with a chronic course of the disorder; and
- Males under age 30 are especially susceptible.

Note: These statistics reflect rates for both children and adults.

Source: Murphy et al., 2001.

Causes and Risk Factors

The etiology for schizophrenia is unknown, although it is generally believed that schizophrenia is a biological disease resulting from some combination of structural brain abnormalities, abnormalities in the prenatal environment, genetic factors, or an imbalance of chemicals in the brain (PSYweb Mental Health Site, No Date). It is thought that an inherited chemical imbalance in the brain may need to be present for schizophrenia to develop (Murphy et al., 2001). The most noted theory is that schizophrenia is due to hyperactivity in the brain dopaminergic pathways (Murphy et al.).

It is likely that genetic, behavioral and environmental factors impact the development of schizophrenia (University of Utah Health Sciences Center, 2002). Research has begun to show that neurodevelopmental disruptions may be the result of both genetic and environmental stressors that occur early in development, leading to slight changes in the brain (U.S. Department of Health and Human Services, 1999). Also, environmental factors later in development can either intensify or restructure genetic or neurodevelopmental deficiencies; thus, findings point to the combination and interaction between genetic and environmental influences (U.S. Department of Health and Human Services). Unfortunately, researchers have not been able to identify the genes responsible for the disorder (Kendler & Diehl, Levinson et al., as cited by the U.S. Department of Health and Human Services). Studies have shown schizophrenia spectrum disorders are about twice as prevalent among first-degree relatives of childhood onset patients (U.S. Department of Health and Human Services). Compared to the general population, the risk is five-fold higher for second-degree relatives of schizophrenia patients, ten- to fifteen-fold higher for first-degree family members, as well as dizygotic (fraternal) twins, and forty- to fifty-fold higher for monozygotic (identical) twins or for someone with both parents having schizophrenia (Carpenter, 2004). Environmental factors associated with schizophrenia include maternal malnutrition, infections during critical periods of fetal development, fetal hypoxia, and other birth and obstetric complications (Carpenter).

It has been established that, both structurally and functionally, the brains of persons with schizophrenia are measurably different from persons without (Torrey, as cited by the Treatment Advocacy Center, 2002). The initial findings of a NIMH (2001) study of the early onset of schizophrenia in children showed that children who had psychotic episodes before puberty

demonstrated evidence of progressively abnormal brain development. Major changes occur in the brain during puberty, which could trigger symptoms of schizophrenia (NIMH, 2007). This study revealed that filled cavities in the middle of the brain enlarged abnormally in children between ages 14 and 18, suggesting a shrinking of brain tissue volume. This research is significant because losses in the rear of the brain areas are influenced primarily by environmental factors and research suggests that a non-genetic cause may have played a role in the initial progression of the disorder (NIMH). Moreover, the findings reveal that the final brain loss pattern is consistent with that seen in adults with schizophrenia.

Comorbidity

Until recently, there was little information on the prevalence of comorbid medical illnesses in those with schizophrenia (Jeste et al., as cited by the U.S. Department of Health and Human Services, 1999). Studies have shown that 68% of children and adolescents with schizophrenia have some other mental health disorder. Depression is the most common comorbid diagnosis; in fact, having a schizophrenic disorder may place children at much greater risk for developing a mood disorder (Alexander, 1996). Moreover, comorbid mood disorders are so prevalent in this patient group that they may be considered a fundamental characteristic of schizophrenic disorders (Alexander). Conduct disorder (CD) and/or oppositional defiant disorder (ODD) are the next most likely comorbid diagnoses.

Comorbid substance abuse disorder may be present in 30 to 50% of all children, with commonly used substances being marijuana (15 to 25%) and cocaine (5 to 10%) (Continuing Medical Education Online Monograph, 1999). Nicotine is the most common form of substance abuse among people with schizophrenia (NIMH, 2007). Unfortunately, these comorbidities are associated with poorer medication compliance, higher rehospitalization rates, and poorer treatment responses (Continuing Medical Education Online Monograph).

Additional studies have shown a significant prevalence of obsessive-compulsive disorder (OCD) in schizophrenia (Tibbo & Warneke, 1999). The prevalence of the two disorders has led to the introduction of a new term *obsessive-compulsive schizophrenia* (Kim et al., 2004). There is significant overlap in the proposed functional circuits of OCD and schizophrenia, which may lead to co-expression of symptoms and have implications in treatment (Tibbo & Warneke). Recent research has shown that there are brain abnormalities present in OCD, as well as in the first episode of schizophrenia (Kim et al.). There are some pathophysiological similarities, such as deficit of the frontostriatal circuit, but more structural abnormalities with schizophrenia (Kim et al.). There have been only a few studies directly comparing the similarities and disparities between schizophrenia and OCD (Kim et al.).

Treatment Considerations

In treating children with schizophrenia, the goal of treatment is to enable the child to resume a lifestyle that is as normal as possible (The Royal College of Psychiatrists, 1999). Recently, the treatment of schizophrenia has advanced considerably, allowing the child to have an improved quality of life.

In order to adequately treat individuals with schizophrenia, service providers must be able to recognize the various phases of the disorder. These phases include the following:

- **Prodrome—**Prior to developing overt psychotic symptoms, most children will experience some period of deteriorating function, which may include social isolation, idiosyncratic or bizarre preoccupations, unusual behaviors, academic problems and/or deteriorating self-care skills. However, while the presence of these problems should raise concerns, psychotic symptoms must be present before a diagnosis of schizophrenia can be made.
- **Acute Phase—**This is the phase in which children often present, and is dominated by positive psychotic symptoms (i.e., hallucinations, delusions, formal thought disorder, bizarre psychotic behavior) and functional deterioration.
- **Recovery Phase—**This follows the acute phase, as the active psychosis begins to remit. This phase often has some ongoing psychotic symptoms, and may also be associated with confusion, disorganization and dsyphoria.
- **Residual Phase—**During this phase, positive psychotic symptoms are minimal. However, children will still generally have ongoing problems with "negative symptoms", i.e., social withdrawal, apathy, and/or flat affect.
- **Chronic Impairment—**Some children remain chronically impaired by persistent symptoms that have not responded adequately to treatment.

Source: AACAP, 2001.

Standard treatment includes pharmacotherapy with antipsychotic medication, typically combined with a variety of psychosocial interventions (U.S. Department of Health and Human Services, 1999). Adequate treatment requires the combination of psychopharmacologic measures with psychosocial ones. Treatment protocols may vary depending on the phase of illness (AACAP, 2001). Treatment recommendations are based on findings for adults because there is a lack of treatment research on children and adolescents with schizophrenia. However, study findings emphasize the need for coordinating treatment by an interdisciplinary treatment team to ensure continuity of services (U.S. Department of Health and Human Services).

The specific treatment for schizophrenia in children will be determined by the physician and will be based on a number of circumstances, such as the child's age, overall health, and medical history. Other factors include extent of the condition, type of schizophrenia, tolerance for specific medications or therapies, expectations for the course of the condition, and preference (University of Virginia Health System, 2004). Follow-up studies have shown that family acceptance, appropriate medication management, and appropriate school placement are predictors of good response to treatment (Findling et al., 2007).

Evidence-based Treatments

The Agency for Healthcare Research and Quality and NIMH co-sponsored the Schizophrenia Patient Outcomes Research Team (PORT) which has offered 30 treatment recommendations. Recommendations were selected on topics ranging from antipsychotic medications and the treatment of depression and other co-occurring symptoms to consumer and family education and support, vocational rehabilitation, and assertive community treatment (NAMI, *Schizophrenia Patient Outcomes Research Team*, 2000).

The PORT treatment recommendations are based on substantial scientific evidence and a comprehensive review of the treatment outcomes literature (Lehman et al., as cited by the U.S. Department of Health and Human Services, 1999). Therefore, there are more recommendations made about pharmacological treatments than psychosocial treatments. The researchers contend that

this reflects only that less is known about psychosocial treatments, but that future research may shed light on other components of care (Lehman et al., 1998). The Schizophrenia PORT also found potentially important treatment domains for which the scientific evidence is inadequate to develop specific treatment recommendations. The PORT treatment recommendations, as edited in the Surgeon General's Report (1999), are outlined in Table 5.

Table 5

Selected Treatments from Schizophrenia PORT Recommendations

No. 1	Antipsychotic medications, other than clozapine, should be used as the first-line treatment to reduce psychotic symptoms for persons experiencing an acute symptom episode of schizophrenia.
No. 2	The dosage of antipsychotic medication for an acute symptom episode should be in the range of 300–1,000 chlorpromazine (CPZ) equivalents per day for a minimum of 6 weeks. Reasons for dosages outside this range should be justified. The minimum effective dose should be used.
No. 8.	Persons who experience acute symptom relief with an antipsychotic medication should continue to receive this medication for at least 1 year subsequent to symptom stabilization to reduce the risk of relapse or worsening of positive symptoms.
No. 9.	The maintenance dosage of antipsychotic medication should be in the range of 300–600 CPZ equivalents (oral or depot) per day.
No. 12.	Depot antipsychotic maintenance therapy should be strongly considered for persons who have difficulty complying with oral medication or who prefer the depot regimen.
No. 23.	Individual and group therapies employing well-specified combinations of support, education, and behavioral and cognitive skills training approaches designed to address the specific deficits of persons with schizophrenia should be offered over time to improve functioning and enhance other target problems, such as medication noncompliance.
No. 24.	Patients who have ongoing contact with their families should be offered a family psychosocial intervention that spans at least 9 months and that provides a combination of education about the illness, family support, crisis intervention, and problem-solving skills training. Such interventions should also be offered to nonfamily members.
No. 27.	Selected persons with schizophrenia should be offered vocational services.*
No. 29.	Systems of care serving persons with schizophrenia who are high users should include assertive case management (ACM) and assertive community treatment (ACT) programs.

** Edited by the U.S. Department of Health and Human Services, 1999.*

Source: Lehman et al., as cited and edited by the U.S. Department of Health and Human Services.

Pharmacological Treatments

Pharmacotherapy is the most extensively evaluated intervention for schizophrenia because it plays such a necessary role in treating schizophrenia. Pharmacotherapy is utilized to control the symptoms of schizophrenia, which may ultimately allow the child an opportunity to live a more normal life. The various pharmacotherapy agents will be outlined in the following paragraphs.

Both children and adults have benefited from the use of antipsychotic medications in that these drugs reduce hallucinations and delusions (National Institute of Mental Health [NIMH], 2001). Studies have indicated that antipsychotics tend to have more success in treating the positive symptoms of the disorder and less so with negative symptoms (Royal College of Psychiatry, 1999). Research has also been conducted on the newer "atypical" antipsychotics. These studies have shown that the newer atypicals are successful in improving incentive and clarity (AACAP, 2001). Furthermore, these drugs also have shown a lower prevalence of side effects that produce movement disorders. They are at least as effective for treating positive symptoms and may be more helpful for negative symptoms (AACAP). When a schizophrenic patient is being treated for aggression, antipsychotic drugs are regarded to be the best treatment option (Carpenter, 2004). Although newer antipsychotic medications show great promise in treatment of schizophrenia, they do not cure schizophrenia (NIMH, 2007).

Clozapine is one of the atypical drugs which has documented efficacy for treatment of schizophrenia in adults, but is usually not considered a "first-line" agent in children due to its considerable potential for adverse effects (AACAP, 2001). Such side effects include excess weight gain (NIMH, 2001) and seizures (AACAP). In a double-blind study outlined in the *Journal of the American Academy of Child Psychiatry*, Clozapine was found to be effective in the treatment of childhood schizophrenia. Children taking the drug showed continued improvement six months after the trial period (Findling et al., 2007).

These agents have promise for treating children where the older school of antipsychotics medications may not be effective (Ballus, as cited by the U.S. Department of Health and Human Services, 1999). Although the newer, more broadly effective medications have increased hopes for improvement, they also have resulted in greater treatment complexity for patients and providers (U.S. Department of Health and Human Services).

Evidence indicates that the newer antipsychotics are more clinically beneficial than the older ones, due to the combination of their effective treatment of positive (and perhaps negative) symptoms, their treatment of comorbid disorder such as anxiety and depression, and their more favorable side effect profile (Lieberman, as cited by the U.S. Department of Health and Human Services, 1999). According to Dixon, as cited by the U.S. Department of Health and Human Services, effectiveness in real-world settings may be lower than efficacy in clinical trials, but this may be attributed to other external factors such as patient heterogeneity, prescribing practices, and issues of noncompliance.

In 2007, the NIMH stated that Aripiprazole, an atypical antipsychotic medication, could be used to treat symptoms of schizophrenia and manic or mixed episodes of bipolar disorder (NIMH, 2007). Preliminary reports have shown it to be useful in children and adolescents; however, several case reports suggest that careful monitoring for adverse effects is needed (Buck, 2004).

Using Antipsychotics in Children

Parameters set forth by the AACAP (2001) recommend that the following occur in utilization of antipsychotic agents in treating children with schizophrenia:

- Adequate informed consent from the parent/youth (depending on the legal age requirements and/or legal status of the patient);
- Documentation of target symptoms;
- Documentation of any required baseline and follow-up laboratory monitoring, dependent on the agent being used;

- Documentation of treatment response;
- Documentation of suspected side effects, including monitoring for known side effects (e.g., extrapyramidal side effects, weight gain, agranulocytosis and seizures with clozapine);
- Adequate therapeutic trials, which generally require the use of sufficient dosages over 4–6 weeks; and
- Long-term monitoring to reassess dosage needs, dependent on the stage of illness. Higher dosages may be required during the acute phases, with smaller dosages during residual phases. The decision to lower dosages (which minimizes the side-effect risks), or undergo medication-free trials, must be balanced by the potential increased risk for relapse. In general, first-episode patients should receive some maintenance psychopharmacological treatment for one to two years after the initial episode, given the risk for relapse.

According to the NIMH (2007), a child should never stop taking an antipsychotic medication without talking to the doctor who prescribed it. Additionally, it is crucial that the medication dosage should be reduced only under a doctor's supervision.

Other Pharmacological Agents

The AACAP (2001) also maintains that some children may benefit from the use of adjunctive agents, including antiparkinsonian agents, mood stabilizers, antidepressants or benzodiazepines. These medications are used either to attend to side effects of the antipsychotic agent or to alleviate associated symptoms. Although these medications are commonly used, there are no studies that address the use of adjunctive agents in children and adolescents.

Psychosocial Treatments

Psychosocial treatments are vital complements to medication for individuals with schizophrenia in that they assist with increasing functioning and recovery (U.S. Department of Health and Human Services, 1999). The PORT treatment recommendations, as cited in Table 5, stipulate that patients should receive pharmacotherapy in conjunction with supportive psychotherapy, family treatment, psychosocial rehabilitation and skill development, and vocational rehabilitation (Lehman & Steinwachs, as cited by the U.S. Department of Health and Human Services, 1999). This is particularly evident in periods of remission because psychosocial treatments continue to help improve quality of life. Psychosocial treatments assume even greater importance for children and adolescents who do not respond to, cannot endure, or do not adhere to medications (U.S. Department of Health and Human Services).

Various psychosocial interventions are recommended, in accordance to the practice parameters set forth by the AACAP (2001):

Psychoeducational therapy for the child, including ongoing education about the illness, treatment options, social skills training, relapse prevention, basic life skills training, and problem solving skills strategies.

Psychoeducational therapy for the family to increase the understanding of the illness, treatment options, prognosis, and developing strategies to cope with the symptoms of the patient.

Several professionally-operated family intervention programs have been developed to help family members address issues associated with severe mental disorders. Such programs have also been developed to assist families in understanding schizophrenia (Hogarty et al., Cazzullo et al.,

Mari & Streiner, McFarlane, as cited by the U.S. Department of Health and Human Services, 1999). Studies have been conducted to ascertain the effectiveness of programs that educate families about schizophrenia, provide support and crisis intervention, and offer training in effective problem solving and communication (U.S. Department of Health and Human Services, 1999). These interventions have strong evidence demonstrating their value in preventing or delaying symptom relapse and appear to improve the patient's overall functioning and family well-being (U.S. Department of Health and Human Services). Community support programs that emphasize social acceptance, such as day programs, school programs, and Boy and Girl Scouts, may also have a positive impact (Findling et al., 2007). The importance of a multimodal approach to treatment should not be ignored.

Other Treatments

Specialized educational programs and/or vocational training programs may be indicated for some children to address related cognitive and functional deficits (AACAP, 2001).

Some children will likely require more intensive community support services. There are some cases where the severity of symptoms necessitate long-term placement in a residential facility (AACAP). However, as in treatment for all disorders in children, the least restrictive setting option should always be utilized as appropriate.

In addition to those treatments provided specifically for schizophrenia, other treatments may be needed to address comorbid conditions or other treatment implications, such as substance abuse, depression and thoughts of suicide (AACAP).

Service Settings and Other Considerations

The following two treatment considerations and setting discussions are set forth by Weiden et al., 1999:

Assertive community treatment (ACT) – The ACT multidisciplinary team enables children to stay at home and in the community. ACT can help with many things like medication, money management, living arrangements, problem solving, shopping, jobs, and school. ACT is a long-term program that can continue to follow the person through all phases of the illness and is especially beneficial for patients who have a severe and unstable course of illness.

Rehabilitation – Different types of rehabilitation programs may help patients during the long-term recovery and maintenance phase of the illness. Rehabilitation may be especially important for those who need to improve their job skills, want to work, have worked in the past, and have few remaining symptoms.

A number of residential options have been developed for patients with schizophrenia. These treatment considerations and setting discussions are discussed in the *Expert Consensus Treatment Guidelines for Schizophrenia: A Guide for Patients and Families* (1999).

Brief respite/crisis home – an intensive residential program with on-site nursing/clinical staff that provides 24-hour supervision, structure, and treatment. This level of care can often help prevent hospitalization for children who are relapsing. Brief respite/crisis homes can be a good choice for children during acute episodes and sometimes during the stabilization phase after an acute episode.

Transitional group home – an intensive, structured program that often includes in-house daily training in living skills and 24-hour awake coverage by paraprofessionals. Treatment may be provided in-house or the resident may attend a treatment or rehabilitation program during the

day. Transitional homes can help children while they are stabilizing after an acute episode and can also be helpful during an acute relapse if a brief respite/crisis home is not available.

Foster homes – a supportive group living situation owned and operated by laypeople. Foster homes are recommended for children during long-term recovery and maintenance, especially if other options, such as living with the family, are not available.

Unproven Treatments

Psychodynamically-oriented therapies are considered to be potentially harmful; therefore, their use is not recommended (U.S. Department of Health and Human Services, 1999).

The AACAP (2001) reports electroconvulsive therapy being used for children of severe cases of schizophrenia. However, electroconvulsive therapy does not appear to be as effective for schizophrenia as it is for mood disorders. The use of electroconvulsive therapy should be seen as a last resort and reserved for cases where several trials of medication therapy have failed.

Cultural Considerations

Although the incidence rates for schizophrenia are very similar across cultures, clinicians must be made aware that what is considered delusional in one culture may be accepted as normal in another (Lu et al., as cited by the U.S. Department of Health and Human Services, 1999). In some cultures, certain delusions and hallucination, i.e., "voices" of religious figures, are part of a standard or normal religious practice. Therefore, classifying an experience as a schizophrenic episode requires the clinician to be both discerning and aware of cultural variations (U.S. Department of Health and Human Services).

Clinicians can misinterpret and misdiagnose patients who possess behavior that may vary from the culture of the diagnosing service provider. For example, clinicians may misinterpret a patient's avoidance of direct eye contact as a symptom of a mental disorder or, conversely, as a normal emotional reserve explained by cultural differences (U.S. Department of Health and Human Services, 1999). African American patients are more likely than Caucasian patients to be diagnosed with severe psychotic disorders in clinical settings (Snowden et al., as cited by the U.S. Department of Health and Human Services).

Both service providers and researchers have acknowledged the challenge in addressing cultural differences in treating mental illness (U.S. Department of Health and Human Services, 1999). In addition, there is growing awareness that ethnicity and culture influence patients' response to medications. Thus a new field has emerged, the field of "ethnopharmacology." Due to racial and ethnic variation in pharmacokinetics, Asians and Hispanic children with schizophrenia may require lower doses of antipsychotics than Caucasians to achieve the same blood levels. As cited by the U.S. Department of Health and Human Services, "… medication differences are the result of underlying biological mechanisms of mental illness related to ethnicity, culture, and gender variations." Although knowledge in this area is scant, cultural patterns should be considered in prescription practices.

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Additional Resources

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Organizations/Weblinks

American Psychiatric Association (APA)
http://www.psych.org/public_info/schizo.cfm

MentalWellness.com
http://www.mentalwellness.com

National Alliance for the Mentally Ill (NAMI)
Colonial Place Three - 2107 Wilson Blvd., Suite 300 - Arlington, VA 2201-3042
800-950-NAMI (6264) or 703-524-7600
http://www.nami.org

National Alliance for Research on Schizophrenia and Depression (NARSAD)
60 Cutter Mill Road, Suite 404 - Great Neck, NY 11021
800-829-8289 and 516-829-0091
http://www.narsad.org

National Institute of Mental Health (NIMH)
Office of Communication and Public Liaison
Information Resources and Inquiries Branch
6001 Executive Boulevard, Room 8184, MSC 9663 - Bethesda, MD 20892-9663
301-443-4513 or TTY 301-443-8431
E-mail: nimhinfo@nih.gov
http://www.nimh.nih.gov
(Direct link to Schizophrenia section:
http://www.nimh.nih.gov/healthinformation/schizophreniamenu.cfm)

National Mental Health Association (NMHA)
1021 Prince Street - Alexandria, VA 22314-2971
800-969-6942 or 703-684-7722
http://www.nmha.org

National Schizophrenia Foundation
403 Seymour Avenue, Suite 202 - Lansing, MI 48933
1-800-482-9534
http://www.NSFoundation.org

Open the Doors
http://www.OpentheDoors.com

Schizophrenia: A Handbook for Families
http://www.mentalhealth.com/book/p40-sc01.html

Schizophrenics Anonymous (SA)
403 Seymour Avenue, Suite 202 - Lansing, MI 48933
800-482-9534
E-mail: inquiries@nsfoundation.org
http://www.nsfoundation.org/sa/index.html

The Schizophrenia Home Page
http://www.schizophrenia.com

Treatment Advocacy Center (TAC)
200 N. Glebe Road, Suite 730 - Arlington, VA 22203
703-294-6001/6002
E-mail: info@psychlaws.org
http://www.psychlaws.org

Understanding Schizophrenia: A Guide for People with Schizophrenia and theirFamilies
http://www.narsad.org/dc/patients_families

University of Virginia Health System
UVa Pediatric Health Topics A to Z, Adolescent Medicine
http://www.healthsystem.virginia.edu/uvahealth/peds_adolescent/schiz.cfm